Patent US 211 *H 19 4/9/04*

Attorney Docket: 895,080-008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

In re the Application of:	Group Art Unit: 2665
Stuart Berman	Examiner: Daniel J. Ryman
Serial No.: 09/330,755	
Filed: June 11, 1999	**RECEIVED**
For: FIBRE CHANNEL SWITCHING SYSTEM	APR 0 6 2004

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Real Party in Interest

Emulux Design & Manufacturing Corporation, formerly known as Vixel Corporation, is

the real party in interest.

Related Appeals and Interferences

There are no known related appeals or interferences.

Status of Claims

The claims presently pending in this application are claims 50-55 and 56-63, renumbeed

66-73, respectively. No claims have been allowed. Claims 50-55 have been rejected and are the

claims on appeal. Claims 56-63, renumbered 66-73, are withdrawn from consideration. Claims

1-49 and 56-67 (as originally numbered) were cancelled at the time of filing.

Status of Amendments

An Amendment filed on February 13, 2003 was entered.

Summary of Invention

Two independent claims, claims 50 and 53, on appeal are directed to improved port

control modules for use in fibre channel switching fabrics. Fibre Channel frames are packets of

data that are provided via a link, e.g., a fiber optic link, to a switching fabric. The switching

fabric receives the frame of data, and attempts to route the frame to a destination location. A

switch fabric is not always able to make the route, and accordingly, provision must be made for

instances where data arrives at the fabric switch, but which cannot for some reason be sent out.

The condition of concern in the claims is 'overrun', namely, where data is written in a buffer and

then other data would write over, or 'overrun', the previously entered data. The condition of

overrun could be because, by way of example, where the incoming data rate exceeds the data rate

at which the data can be output from the switch.

As is reflected in the claims, this problem is solved by "inclusion of buffer overrun

prevention logic between the encoder/decoder and the buffer, the buffer overrun prevention logic

tagging, but not terminating, words that overrun the buffer". Quite specifically, the claim refers

to the 'overrun' condition, and proposes a specific solution. In comparison to the prior art, the

claim specifically calls out that a overrun results in "tagging, but not terminating" the words that overrun the buffer. This critical distinction will be dispositive here.

Issues

The issues on appeal arises under 35 U.S.C. §103. The Examiner has combined at least 3 references for each of the obviousness rejections, without identifying any suggestion or motivation in the art to make the claimed combination. As such, the obviousness rejections fail, and the claims should be allowed.

Grouping of Claims

Appealed claims 50-55 stand as a group.

The Claims on Appeal

The claims on appeal are claim 50-55. Claim 50 is representative:

> 50.   An improved port control module for use in a fibre channel switching fabric comprising:
>
> a fibre channel input/output port for connection to a link,
>
> an encoder/decoder in communication with the input/output port, and
>
> a buffer,
>
> the improvement comprising the inclusion of buffer overrun prevention logic between the encoder/decoder and the buffer, the buffer overrun prevention logic tagging, but not terminating, words that overrun the buffer.

The Rejection

The sole rejection on appeal is that set forth at pages 3 thru 5 of the Office Action.

Argument

The Base Reference Fails To Address The Key Claim Limitations At Issue

The Examiner's base reference Bennett U.S. Patent No. 5,592,160 addresses the issue of "overflow", not "overrun", which is the clearly recited claim limitation. Bennett et al. discloses a very particular solution to a very particular system problem unique to Bennett et al. Specifically, Bennett et al. described using buffers having a storage capacity of 2 kbytes (2096 bytes) (Bennett, column 5, line 61). According to Bennett, "the maximum size frame in accordance with the Fibre Channel industry standard is 2148 bytes long". (Bennett, column 5, lines 66-67). Bennett recognized the possibility that if a frame of the maximum size, namely 2148 bytes, was received, it would overflow the 2 kbyte buffer (having 2096 bytes). Bennett proposed the specific solution of adding an overflow memory buffer in order to hold any of the data that overflowed the 2 kbyte buffer. (Bennett, column 6, lines 3-4). Bennett is addressing the over*flow* which can result directly from Bennett's specific buffer size limitations. Bennett et al. contains absolutely no teaching or suggestion regarding the claimed buffer "overrun" prevention logic as explicitly claimed. Bennett et al. truly teaches nothing beyond what is acknowledged in the claim to be old, i.e., that portion before "the improvement comprising".

The Gulick Reference May Not Be Used for Two Reasons - - First, there is no suggestion to combine the references and second, the reference explicitly teaches away from the claimed invention.

The secondary reference, Gulick, may not be used for two fundamental reasons. First, there is absolutely no teaching or suggestion in the art to combine the Bennett structure with Gulick. Gulick is not in the Fibre Channel field, rather, it is directed to a dual-port timing controller. The Office Action makes no attempt to identify any teaching or suggestion to

combine these teachings. As such, the combination may not be made. See, e.g., *In re Rouffet*, 149 F.3d 1350, 1358, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998). ("To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.")

Secondly, Gulick expressly teaches the *opposite* of the claimed invention. Rather that performing the express limitation of the claim of tagging, "but not terminating" words that overrun the buffer, Gulick does the opposite:

> "If the top location in the buffer does not become empty before the next bit is to be shifted into the shift register, a FIFO Overrun condition exists. When this happens **the packet is terminated**, the last byte in the FIFO is tagged as the last byte in the packet, status is latched – including the overrun condition indicator – for delayed reporting, and the receive returns to state zero ..." (Gulick, column 30, lines 30-38).

Accordingly, the use of Gulick and Bennett made not be made for either of these two reasons, either one of which is sufficient to reverse the rejection.

Lowell Fails for the Same Two Reasons --- First there is no suggestion to combine and secondly, there is no teaching to perform the claimed invention.

The Examiner admits at page 4 of the rejection that Bennett in view of Gulick fails to meet the claim limitation of "not terminating" words that overrun the buffer. The Examiner attempts to cure this blatant deficiency by suggesting that Lowell teaches that packets may be saved when an overflow occurs. There is simply no teaching or suggestion to combine these three references. Clearly, even assuming for the sake of argument that Gulick can be combined with Bennett, there is simply no reason whatsoever to ignore the express teaching in Gulick to terminate the words that overrun the buffer. Citation of Lowell must be rejected as there simply

is no reason, suggestion or motivation to wholesale ignore the express and clear teaching of Gulick and to do exactly the opposite of what the reference clearly teaches.

Any one of the preceding reasons is sufficient to cause reversal of the rejection. Simply put, the base reference addresses a different problem entirely, and there is no suggestion or motivation in the art to combine the various references. Even if there were a suggestion or motivation to combine the references, the inescapable fact is that the Gulick reference teaches exactly opposite to what is claimed, and no piling on of a third reference will change the teaching of Gulick. There is simply no teaching or suggestion that renders the claims obvious.

Request for Oral Hearing

Applicant requests an Oral Hearing. The Commissioner is hereby authorized to charge Deposit Account No. 50-2862 for requisite fee of **$145.00** for such request.

Fees & Miscellaneous

Pursuant to Rule 1.192 this Appeal Brief is being filed in triplicate.

The Commissioner is hereby authorized to charge Deposit Account No. 50-2862 for requisite fee of **$165.00** for filing an Appeal Brief.

Petition for Extension

The requisite Petition for Extension of Time is filed herewith.

The Commissioner is hereby authorized to charge any overpayment or deficiencies of fees to Deposit Account No. 50-2862.

Respectfully submitted,

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Dated: 3/30/04

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APPENDIX

Claim 50.   An improved port control module for use in a fibre channel switching fabric comprising:

a fibre channel input/output port for connection to a link,

an encoder/decoder in communication with the input/output port, and

a buffer,

the improvement comprising the inclusion of buffer overrun prevention logic between the encoder/decoder and the buffer, the buffer overrun prevention logic tagging, but not terminating, words that overrun the buffer.

Claim 51.   The improved port control module for use in a fibre channel switching fabric of claim 50 wherein the buffer is a first-in, first-out buffer.

Claim 52.   The improved port control module for use in a fibre channel switching fabric of claim 50 where the buffer overrun prevention logic sets tag bits to a unique value indicative of an overrun conditions.

Claim 53.   A method for control of an input buffer, where the input buffer is adapted to receive a stream of data at a rate which is not subject to control by the buffer, comprising the steps of:

receiving fibre channel data,

placing the data in the buffer,

monitoring for an overflow condition,

and if an overflow condition is detected, including a detectable signal in association with the data, including providing tag bits, but not terminating, data that overrun the buffer, and

providing the data from the buffer and the detectable signal to subsequent devices.

Claim 54.   The method of claim 53 for control of an input buffer, the detectable condition comprising tag bits.

Claim 55.   The method of claim 54 for control of an input buffer wherein the tag bits are set to a unique condition.